

**WHAT IS CLAIMED IS:**

1. A method of connecting calls through a radio access network to a mobile radio in active communication with a first core network on a first call, comprising the steps of:

receiving the first call on a first core network channel;  
delivering the first call to the mobile radio on a call channel;

receiving a page request from a second core network;

delivering the page request to the mobile radio on a page channel while continuing to maintain the first call on the call channel;

receiving a page response from the mobile radio on the call channel;

establishing a second core network channel to the second core network; and

delivering the page response to the second core network on the second core network channel.

2. A method according to claim 1, further including the steps of:

receiving a second call from the second core network,

multiplexing the first call from the first core network with the second call from the second core network,

delivering the multiplexed first and second calls to the mobile radio on the call channel.

3. A method according to claim 1, wherein the first and second core networks are the same core network.

4. A method according to claim 1, wherein the step of  
5 receiving the page request occurs over a page channel monitored by the mobile radio while in said active communication on the first call.

5. A method according to claim 1, wherein the page  
10 response is delivered on a signaling line of the call channel.

6. A method according to claim 2, further including the step, after the step of delivering the multiplexed first and second calls, of:  
simultaneously processing the first and second calls at  
15 the mobile radio.

7. A radio access network, comprising:  
a plurality of network links to establish call traffic communications with a plurality of core networks,  
20 a plurality of mobile station links to establish call traffic communications with a plurality of mobile stations,  
a page channel monitored by the plurality of mobile stations and in communication with the core networks to receive page requests for the establishment of call connections to the mobile  
25 stations,  
a multiplexer for combining call traffic communications from first and second core networks onto a single channel for communication of a plurality of calls to a single mobile

station, said multiplexer being initiated by a page request on said page channel from said first core network and a page response on said single channel from said single mobile station.

- 5           8. A radio access network according to claim 7, wherein:  
               said page channel is in substantially continuous  
               communication with said plurality of mobile stations.

- 10           9. A radio access network according to claim 7, wherein:  
               said plurality of network links establish a first call on a  
               first core network channel from said first core network and a second  
               call on a second core network channel from said second core  
               network.

- 15           10. A radio access network according to claim 9, wherein:  
               said multiplexer combines said second call with said  
               first call and delivers the combined signals onto said single channel.

- 20           11. A radio access network according to claim 7, wherein:  
               said plurality of network links and said plurality of  
               mobile station links comprise traffic channels and signal channels,  
               and  
               said multiplexer combines traffic channels from said  
               first and second core networks and combines signal channels from  
               said first and second core networks.
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12. A radio access network according to claim 7, wherein:  
said plurality of network links and said plurality of  
mobile station links comprise traffic channels and signal channels,  
and

5               said multiplexer routes traffic channels to  
corresponding first and second core networks and routes signal  
channels to corresponding first and second core networks.

13. A system for connecting a second call to a mobile radio  
10 engaged in an active first call, comprising:

a first core network,

a second core network,

a generic radio access network in communication with  
said first core network via a first core network channel and with a  
15 second core network via a second core network channel and  
containing a page channel in communication with said first and  
second core networks,

a plurality of mobile terminals in communication with  
said generic radio access network and monitoring said page  
20 channel, a first of said mobile terminals engaged in said active first  
call with said first core network via a mobile terminal call channel  
and the first core network channel,

wherein said generic radio access network includes a  
multiplexer to receive via the mobile terminal call channel a page  
25 response signal from said first mobile terminal and to route the page  
response signal to the second core network via the second core  
network channel while continuing to route said active first call from

said mobile terminal call channel to said first core network via the first core network channel.

14. A system according to claim 13, wherein:

5           the first call is communicated between said generic radio access network and said first mobile terminal via first traffic and control channels of said mobile terminal call channel, and  
            after said page response, said multiplexer consolidates said first and second calls to first one mobile terminal via said first  
10   traffic and control channels.

15. A system according to claim 13, wherein:

            the first call is communicated from said first core network to said generic radio access network via first traffic and  
15   control channels of said first core network channel,  
            the second call is communicated from said second core network to said generic radio access network via second traffic and control channels of said second core network channel,  
            the first and second calls are communicated from said  
20   generic radio access network to said first mobile terminal via third traffic and control channels of said mobile terminal call channel;  
            and  
            the page request is received by said first mobile terminal via said page channel, the page response is sent by said  
25   first mobile radio to the generic radio access network via said third traffic and control channels, and the page response is sent by said generic radio access network to said second core network via said second traffic and control channels.